

RESTRICTION AND ELECTION REQUIREMENT

The Examiner has required restriction under 35 U.S.C. 121 and 372 based on PCT Rule 13.1 and, pursuant to 37 CFR 1.499, election of a single one of the following inventions as identified by the Examiner.

Group I, claims 1-9, drawn to a timing element comprising a delay composition in a sheath, the delay composition comprising a reactive polymer material.

Group II, claims 10-18, drawn to a method of making a timing element comprising a reactive polymeric material in a sleeve.

Group III, claims 19-21, drawn to an initiator comprising a timing element, the timing element comprising a reactive polymeric material.

Group IV, claims 22-24, drawn to a method of making a delay initiator comprising a reactive resin.

Group V, claims 25-27, drawn to a method of making a delay initiator comprising a reactive polymeric material.

Group VI, claim 27, drawn to a segment of reactive polymeric material.

ELECTION WITH TRAVERSE

Applicants elect, with traverse, claims 1-9 identified as Group I by the Examiner. Applicants' traversal extends at least to Groups I, II and III.

REASONS FOR TRAVERSAL

The restriction requirement is respectfully traversed for the following reasons.

1. The Examiner contends that the inventions listed as Groups I - VI do not relate to a single inventive concept under PCT Rule 13.1 because under PCT Rule 13.2 they lack the same or corresponding special technical features for the following reasons. "...the shared special technical feature of an element comprising a reactive polymer material **capable of being used** as a timing element does not amount to a special technical feature that is novel or unobvious over the prior art at least as evidenced by Manzarea (US 5,681,904) and Shilliday et al. (US 6,886,469 B2). (Refer to the IPER submitted as part of the 2/24/2010 IDS)." (*Emphasis and bold face text in the original.*)

It is respectfully submitted that the Examiner's above-quoted comment is inappropriate because the claims do not define a material "capable of being used as a timing element" but a timing element made of a reactive polymeric material. As discussed be-

low in paragraphs 2 and 3 under "Reasons for Traversal", the prior art cited by the Examiner does not show or suggest use of GAP polymers as timing elements, but only their use in configurations requiring extremely rapid reaction, such as inflating automotive restraint air bags. These references, as noted above, teach away from use of these materials in controlled, timed reactions and therefore do not affect novelty or unobviousness of the common technical feature. For one, it is irrelevant to unit of invention whether or not the elements of the various claims, e.g., independent claims 1 and 10, cited by the Examiner, "could inherently be used for many different purposes that require a reactive polymer capable of burning at a known rate." Unity of invention is determined solely by the terms of the claims, not by other potential uses of what is claimed. For example, claims 1 and 10, and the claims dependent thereon, all define a timing element, as do claims 19-21. Whether one can conceive of other uses for the claimed subject matter has nothing to do with unity of invention. It does not require citation of authority to note that the Examiner's search need cover only prior art which is material to patentability of the claimed subject matter.

2. The Examiner further contends that "the element of independent claim 1 and the element produced by the method of independent claim 10, could inherently be used for many different purposes that require a reactive polymer capable of burning at a known rate. As such at least Shilliday et al. (US 6,886,469 B2) and Manzarea (US 5,681,904) disclose a gap composition that inherently has a known burn rate and that could inherently be used as a delay composition in any number of potential applications. Therefore unity of invention does not exist between the groups. To search and examine all the inventions would place an excessive burden on the examiner."

The Applicant disagrees¹ with the contention that the cited references inherently show that their polymers could be used as delay compositions, but alleged inherency in the prior art is a basis for rejecting a claim but not for requiring restriction.

3. Manzara discloses GAP polymers *per se* and does not disclose or suggest use of the GAP polymers as a timing device. At column 2, lines 9-25, Manzara discloses various uses for the GAP polymers including "as a gas-generating propellant such as a component of an air bag apparatus." All the disclosed uses are as a high energy mate-

¹ As discussed elsewhere herein, the cited art contains no suggestion that the polymers be used as delay compositions, but shows their use only in combination with other specified active ingredients or in applications requiring instantaneous, or as close to instantaneous as possible, reaction of the compositions.

rial or a destructible adhesive and are therefore incompatible with the relatively slow reaction rate required of a timing element. If anything, Manzara teaches away from the use of GAP material as a timing element.

4. In Shilliday et al. a GAP polymer is disclosed only as an example of a gas-generating polymer utilized as a binder for the reactive charge in a gas-generating system such as automotive restraint (air bag) systems. See column 5, lines 14-19 of Shilliday et al. Shilliday et al., like Manzara, in fact teaches away from the concept of a timing element by its use of a GAP polymer binder in a device in which extremely rapid reaction is essential, and obtained. The rapid reaction is needed to nearly instantaneously form a gas to fill the automotive air bag upon crash impact. This is the antithesis of a timing element. A timing element requires a relatively slow and controlled rate of reaction in order to establish a precise delay time before passage of an initiation signal to an explosive or other initiation device.

5. It is respectfully submitted that the reactive polymeric material timer element as defined in Applicants' claims 1-27 is a novel, unobvious and unifying single inventive concept.

6. Claim 19 has been amended to Jepson format, acknowledging that the terminology prior to the phrase "the improvement comprising that" merely defines the well-known construction of an initiator, i.e., a detonator, comprising the known environment in which the novel timing element is positioned. Therefore, it is submitted that the same search required in respect of Groups I and II would provide the search needed for Group III.

7. Groups I and II define, respectively, a timing element and a method for making the timing element. The timing element of claim 1 can be made only by the method of claim 10, and the method of claim 10 can produce only the timing element of claim 1. It is respectfully submitted that possible other uses for the product are irrelevant to considering unity of invention of the claimed subject matter, so that the claims of Groups I and II have unity of invention.

8. The within amendment to claim 19 brings its subject matter within the scope of the search required for the claims of Groups I and II. It is therefore requested that at least claims 1-21, the claims of Groups I, II and III, be examined in this application.


* * *

Appl. No. 10/553,932
Reply dated February 4, 2011
Reply to Office Action of January 7, 2011

In view of foregoing, it is respectfully requested that the restriction and election requirement be at least partially withdrawn.

Respectfully submitted,

CANTOR COLBURN LLP
Applicants' Attorneys

By: 

Victor E. Libert
Reg. No. 24,224

Cantor Colburn LLP
20 Church Street
22nd Floor
Hartford, CT 06103-3207
Telephone: (860) 286-2929
Facsimile: (860) 286-0115
Customer No. 23413